1	2	3	4	5	6
31	Dadar and Nagar Haveli	0	0.00	0.00	0.00
32	Daman and Diu	0	0.00	0.00	0.00
33	Delhi	0.65	0.02	0.11	0.78
34	Lakshadweep	0	0.00	0.00	0.00
35	Pondicherry	0.08	0.63	0.13	0.85
36	Others	36.19	35.30	42.49	113.99
	TOTAL:	152.14	185.70	281.72	619.56

Test projects on village energy security in A.P.

2220. SHRIMATI N.P. DURGA: Will the Minister of NEW AND RENEWABLE ENERGY be pleased to state:

(a) whether test projects on village energy security are being implemented in Andhra Pradesh;

(b) if so, the details thereof;

(c) the aims and objectives of the projects; and

(d) the plans of Government to extend these test projects to other parts of the country as they are now covering only 12 States and selected villages?

THE MINISTER OF STATE OF THE MINISTRY OF NEW AND RENEWABLE ENERGY (SHRI VILAS MUTTEMWAR): (a) and (b) Three test projects on village energy security were sanctioned for villages in Cuddapah, East Godavari and Warangal districts of Andhra Pradesh as per proposals forwarded by the State Nodal Agency, Non-Conventional Energy Development Corporation of Andhra Pradesh (NEDCAP). The projects had to be cancelled subsequently as requested by the State Agency as these villages are being electrified by conventional means through grid extension.

(c) The projects are based on utilization of locally available biomass resources and aim at meeting the total energy requirements including cooking, lighting and motive power, with full participation of the local communities, including women.

(d) A total of 200 test projects are planned to be taken up, of which 79 test projects are at present under implementation in 11 States. A country-wide programme can be considered based on the outcome of the test projects.

Development of renewable energy sources

2221. SHRI RAVULA CHANDRA SEKAR REDDY: Will the Minister of NEW AND RENEWABLE ENERGY be pleased to state:

(a) whether Government are concentrating more on developing renewable sources of energy;

(b) if so, the details thereof;

(c) whether it is a fact that the demand for fossil material like oil, coal and gas would also go up in future, leading to more pollution in the atmosphere; and

(d) if so, the reaction of Government thereto?

THE MINISTER OF STATE OF THE MINISTRY OF NEW AND RENEWABLE ENERGY (SHRI VILAS MUTTEMWAR): (a) The Government is implementing a wide range of programmes for the development and deployment of new and of renewable energy. To encourage investment in the renewable energy sector, fiscal and financial incentives are being provided that include capital/interest subsidy, accelerated depreciation, concessional duties and relief from taxes, apart from preferential tariff for grid power being given in most potential States. Publicity and awareness on the need and usefulness of renewable energy systems/devices is created through print, postal and electronic media and special events like the Rajiv Gandhi Akshay Urja Diwas are being organised. District-level Advisory Committees have also been constituted in the states to facilitate effective coordination of renewable energy schemes. These apart, research, design, and development in new and renewable energy is being supported.

(b) Details of achievements under various renewable energy programmes as on 30.06.2007 are given in the Statement (*See* below).

(c) and (d) The Expert Committee on Integrated Energy Policy in its Report (IEPR 2006) has estimated that by 2032, *i.e.*, 25 years from now primary commercial energy/requirement in the country would need to go up 4-5 times the current level, electricity generation installed capacity 5.6-7 times the current level and oil requirement by 3-6 times the current level. The need to diversify energy supply options is brought out in the IEPR 2006. Accordingly, increased focus is being laid on the deployment of renewable power that is likely to account for around 5 per cent in the electricity-mix by 2032. This apart, alternate fuels, essentially bio-fuels, are proposed to be progressively used for blending with diesel and petrol, mainly for transport applications.

Statement

Details of estimated potential and achievements in the country as on 30.06.2007

Sl. No.	Sources/Systems	Estimated Potential	Achievements (as on 30.06.2007)
1	2	3	4
I.	**Power From Renewables**		
A.	**Grid-interactive renewable power**		
1.	Bio Power (Agro residues and Plantations)	16,881[1]	542.80 MW
2.	Wind Power	45,195[2]	7,230.99 MW
3.	Small Hydro Power (up to 25 MW)	15,000[3]	2013:17 MW

1	2	3	4
4.	Cogeneration-bagasse	5,000[4]	634.83 MW
5.	Urban Waste to Energy	2,700[5]	43.45 MW
6	Solar power		2.12 MW
	Total (in MW)	84,776[6]	10,467.36 MW
B.	**Captive/CHP/Distributed renewable power**		
7.	Biomass/Cogen.(non-bagase)		45.80 MWeq.
8.	Biomass Gasifier	-	86.53 MWeq.
9.	Energy Recovery from Waste	-	19.76 MWeq.
	Total	-	152.09 MWeq.
II.	**Remote Village Electrification**	-	3207/830 villages/hamlets
III.	**Decentralised Energy Systems**		
10.	Family Type Biogas Plants	120 lakh	39.34 lakh
11.	Solar Photovoltaic Programme	20 MW/Sq.km.	
	i. Solar Street Lighting System	-	61,321 nos.
	ii. Home Lighting System	-	3,17,066 nos.
	iii. Solar Lantern	-	5,65,828 nos.
	iv. Solar Power Plants	-	1.87 MWp
12.	Solar Thermal Programme	-	
	i. Solar Water Heating Systems	140 million sq.m. collector area	1.95 million sq.m. collector area
	ii. Solar Cookers	-	6.17 lakh
13.	Wind Pumps	-	1180 nos.
14.	Aero-generator/Hybrid Systems	-	608.27 kW
15.	Solar Photovoltaic Pumps	-	7068 nos.
IV.	**Other Programmes**		
16.	Energy Parks	-	494 nos.
17.	Aditya Solar Shops	-	268 nos.
18.	Battery Operated Vehicle	-	256 nos.
19.	Research, Design, Development	-	600 projects

MW = Megawatt kW = Kilowatt, kWp == kilowatt peak, sq.m. = square metre

Note: -

(1) Although the potential is based on surplus agro-residues, in practice there are several barriers in collection and transportation of such agro-residues to the generation site and biomass power generation units prefer to use fuel-wood for techno economic reasons. A potential of 45,000 MWe from around 20mha of wastelands assumed to be yielding 10MT/ha/annum of woody biomass having 4000 k-cal/kg with system efficiency of 30% and 75% PLF has not been taken into account. In order to realize this potential a major inter-Ministerial initiative involving, among others, Environment and Forests, Agriculture, Rural Development, and Panchayati Raj would be required. Further, a Biomass Atlas is under preparation which is expected to more accurately assess State-wise renewable energy potential from agro-residues.

(2) Potential based on areas having wind power density (wpd) greater than 200 W/m^2 assuming land availability in potential areas @ 1 per cent and requirement of wind farms @ 12 ha/MW, not all of which may be technically feasible for grid-interactive wind power. In line with international practice for setting up grid-interactive wind power systems on sites having wpd greater than 300 W/m^2, potential would be 5000 MW. Further, preliminary surveys do not at this juncture suggest a sizeable grid-interactive off-shore wind power potential.

(3) Technically feasible and economically viable hydro potential is generally accepted at 40% of the total estimated potential. Accordingly, the technically feasible and economically viable small hydropower potential could be around 6000MW.

(4) With new sugar mills and modernization of existing ones, technically feasible potential is assessed at 5000 MWe, not all of which may be economically viable. Furthermore, several sugar companies/ cooperatives are unable to develop bankable projects on account of their financial and liquidity positions.

(5) With expansion of urban population post census 2001, current technically feasible municipal waste-to-energy potential is assessed at 1700 MWe, not all of which may be economically viable. However, subsidy disbursement under the municipal waste to energy programme had been kept in abeyance on the orders of the Supreme Court in the case of a PIL, in May, 2005. This stay has now been vacated for setting up 5 pilot projects.

(6) Not all of this renewable energy potential may be suitable for grid-interactive power for technical and/ or economic reasons. Further, estimate excludes potential for solar power which is dependent on future developments that might make solar technology cost-competitive for grid-interactive power generation applications.

Harnessing the bio-mass energy

2222. SHRIMATI SHOBHANA BHARTIA: Will the Minister of NEW AND RENEWABLE ENERGY be pleased to state:

(a) whether Government have signed a $ 39.15 million project with UNDP Global Environment Fund and German financial institution kfw Bankengruppe, to develop projects for harnessing the bio-mass energy resources in the country;

(b) if so, whether this project would be financed by UNDPGEF to the tune of $ 5.65 million, and co-financed by Government; and

(c) the main aim and objectives of this project?

THE MINISTER OF STATE OF THE MINISTRY OF NEW AND RENEWABLE ENERGY (SHRI VILAS MUTTEMWAR): (a) Yes, Madam.

(b) The cost of the project is estimated at US $ 39.15 million of which US $ 5.65 million is a grant from the Global Environment Facility apart from US $ 5.24 million equivalent as contribution from this Ministry and US $ 24.82 million as proposed